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The Indochina Entomologist
OPEN ACCESS
New Taxon
ICE, 2 (21): 221–226 (2026)
ISSN (Online) 3065-1107
www.indochinaentomologist.com

https://doi.org/10.70590/ice.2026.02.21
http://zoobank.org/urn:lsid:zoobank.org:pub:FEC2C9B6-D56B-41BD-B522-C47573DAC437

A new species of *Anagrus* (Hymenoptera: Mymaridae) from China

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Abstract: A new species of the genus *Anagrus* Haliday, 1833 (Hymenoptera: Mymaridae), *Anagrus dinghuensis* **sp. nov.** is described and illustrated from Dinghushan National Nature Reserve (Guangdong Province, China). Detailed morphological characteristics are provided in this study.

Keywords: Chalcidoidea, Mymaridae, parasitoids, taxonomy, China

中国缨翅缨小蜂属一新种记述（膜翅目：缨小蜂科）

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摘要：本文报道了缨翅缨小蜂属（膜翅目：缨小蜂科）一新种——鼎湖缨翅缨小蜂 *Anagrus dinghuensis* **sp. nov.**，并详细记述了新种的形态特征。

关键词：小蜂总科，缨小蜂科，寄生蜂，分类学，中国

Citation: Jin X-X, Wen J-S & Zu G-H 2026: A new species of *Anagrus* (Hymenoptera: Mymaridae) from China. *The Indochina Entomologist*, 2 (21): 221–226. [金香香，温竣升 & 祖国浩 2026: 中国缨翅缨小蜂属一新种记述（膜翅目：缨小蜂科）. 中南半岛昆虫学家, 2 (21): 221–226.]
https://doi.org/10.70590/ice.2026.02.21

Accepted by Cheng-Bin WANG: 9.IV.2026; published online: 13.IV.2026

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Introduction

Anagrus was established by Haliday in 1833, and has a long and complex taxonomic history, with no type species designated at the time of its erection. Subsequently, Westwood (1839) designated *Ichneumon atomus* Linnaeus as the type species of this genus (Haliday 1833; Westwood 1839). The genus *Anagrus* Haliday (Hymenoptera: Mymaridae) consists of primary egg parasitoids of Cicadellidae and Delphacidae (Hemiptera) (Li *et al*. 2018; Triapitsyn 2015). As important natural enemies, these wasps play a pivotal role in regulating the population dynamics of hemipteran pests and thus act as valuable biological control agents in agricultural and forestry ecosystems.

Based on comprehensive morphological and taxonomic evidence, several genera have been synonymized with *Anagrus*. For instance, *Pteratomus* Packard, 1864, a monotypic genus with *Pteratomus putnamii* Packard as its monotypic type species was first suggested as a synonym by Girault (1929), and later formalized by Annecke & Doutt (1961) (Girault 1929; Annecke & Doutt 1961). Similarly, *Paranagrus* Perkins, 1905 was synonymized with *Anagrus* by Bakkendorf (1926), (Perkins 1905; Gahan & Fagan 1923). In addition, *Anagrella* Bakkendorf, 1962, established for the single species *Anagrella mymaricornis* Bakkendorf, was also placed in synonymy with *Anagrus* by Viggiani (1970) (Viggiani 1970).

Anagrus is a cosmopolitan genus currently comprising 99 described species. Among these, 22 species have been recorded in China (Li *et al*. 2018; Chiappini & Lin 1998). In this paper, a new species of the genus *Anagrus* Haliday, belonging to the *atomus* species group, is described and illustrated from Dinghushan National Nature Reserve, Guangdong Province, China, under the name *Anagrus dinghuensis* **sp. nov.** Detailed taxonomic comparisons with its closely related species are also provided.

Materials and methods

All specimens were collected by using yellow pan trapping in Dinghushan National Nature Reserve, Zhaoqing City, Guangdong Province, China during 1–2 September 2017. Specimens were dissected and mounted in gum arabic medium on slides following the method of Noyes (1982), as modified for Mymaridae by Huber (1988). Body length and dissections were measured under an Olympus SZX7 stereomicroscope, while all other observations and measurements were performed using a Nikon Eclipse 80i microscope. All measurements are given in micrometers (μm). Morphological characters are described based on Triapitsyn (2015).

All specimens are deposited in the Institute of Zoology, Guangdong Academy of Sciences, China (IZGAS).

The following acronyms are applied in the main text: F1–F5 = funicle segment 1 to 5; mps = multiporous plate sensilla.

Taxonomy

Anagrus dinghuensis Jin, Wen & Zu, sp. nov. 鼎湖缨翅缨小蜂

https://zoobank.org/E91A0BF1-1B1B-4D69-B09D-D164ADC36D60

Figs 1, 2

Type material: 1♀1♂. **Holotype:** 1♀ (IZGAS) [on slide], **CHINA:** Guangdong Province, Zhaoqing City, Dinghushan National Nature Reserve, 1–2.IX.2017, Xiang-Xiang Jin, Guang-Xin Wang, Wen-Jian Li, collected by yellow pan trapping. **Paratype:** 1♂ (IZGAS) [on slide], the same data as holotype.

Diagnosis. Female. Ocelli on a stemmaticum; F3–F5 each with 1 mps; F6 with 2 mps; clava with 3 mps (Fig. 1B); fore wing 8.7× as long as broad (Fig. 1D); ovipositor slightly exserted beyond the apex of gaster; ovipositor 1.85× length of protibia (Fig. 1F). Male. Scape (Fig. 2A) 2.0× as long as broad; fore wing (Fig. 2C) 7.5× as long as broad.

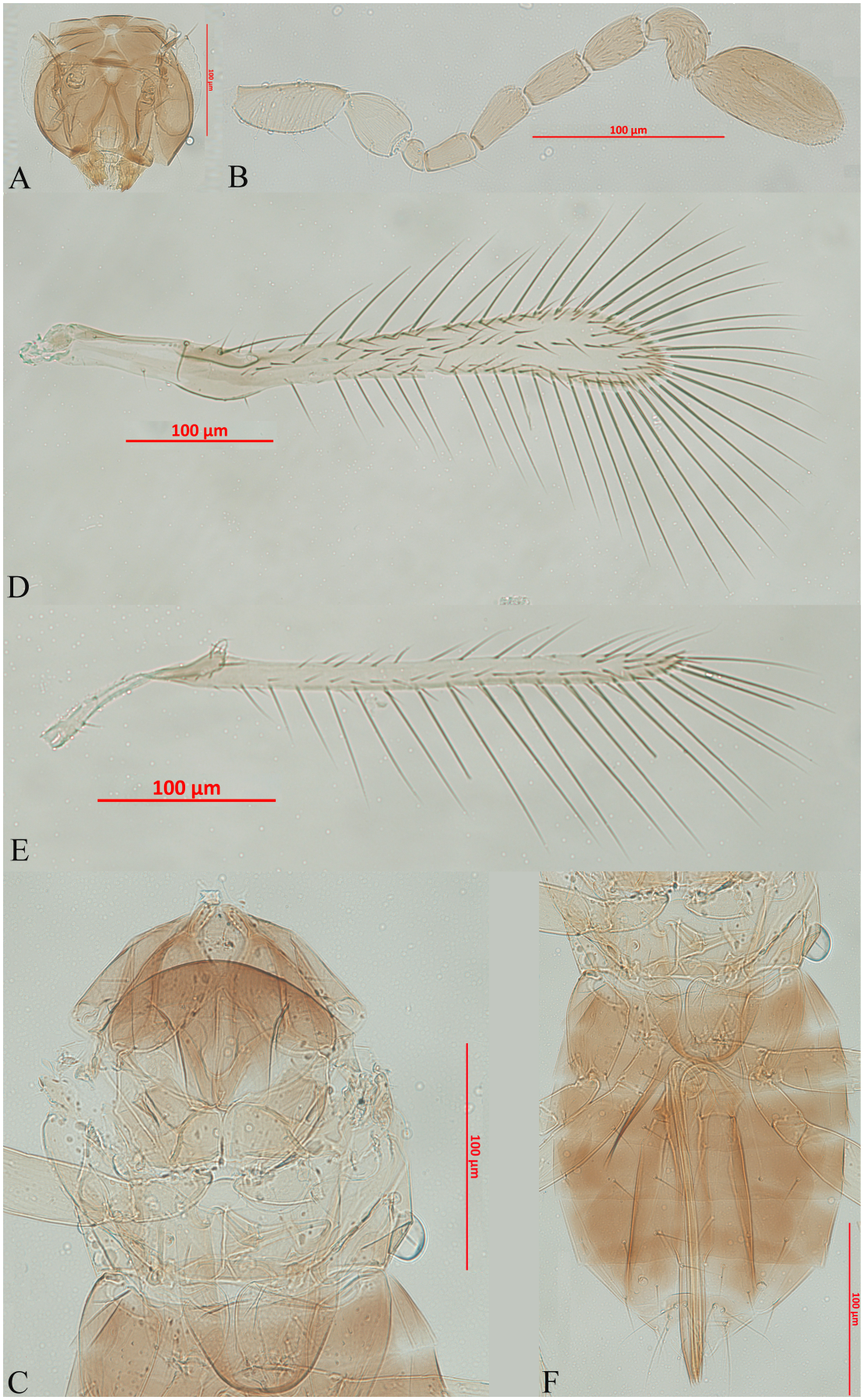

FIGURE 1. *Anagrus dinghuensis* Jin, Wen & Zu, **sp. nov.**, female, holotype: **A** head **B** antenna **C** thorax **D** fore wing **E** hind wing **F** gaster. Scale bars=100 µm.

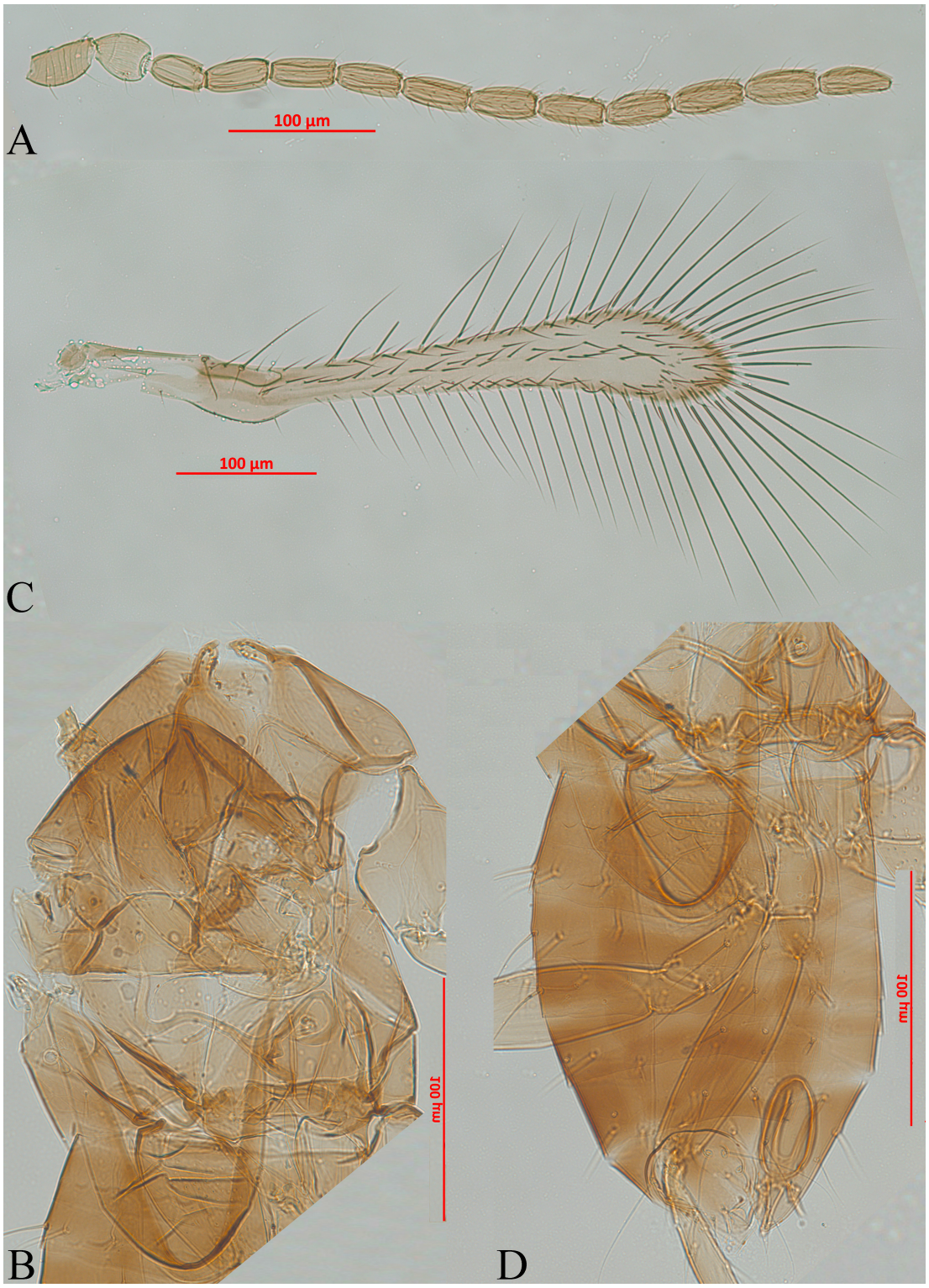

FIGURE 2. *Anagrus dinghuensis* Jin, Wen & Zu, **sp. nov.**, male, paratype: **A** antenna **B** throax **C** fore wing **D** gaster. Scale bars=100 µm.

Description. Female. Body length 411 μm. Head brown except eyes and ocelli dark brown (Fig. 1A); antenna brown, except radicle, scape and pedicel yellow (Fig. 1B); thorax dark brown, except posterior half of mesoscutum to apex of propodeum yellow and wings brown (Figs 1C, D); gaster dark brown, paler apically; legs pale brown, with apical tarsomeres brown (Fig. 1F).

Head (Fig. 1A) with ocelli on a stemmaticum. Scape (Fig. 1B) with weakly longitudinal striations, about 2.3× as long as broad; pedicel longer than F1; F1 shortest, without mps; F2–F5 subequal in length, F2 without mps, F3–F5 each with 1 mps; F6 longest, with 2 mps; clava 2.2–2.3× as long as broad, with 3 mps.

Thorax (Fig. 1C) nearly smooth. Mesoscutum with notauli, without adnotaular setae; phragma apically truncate, extending to the first abdominal segment. Fore wing (Fig. 1D) 8.7× as long as broad, with 2 bare areas on the widest part of the disc; longest marginal fringe 3.3× as long as wing width. Hind wing (Fig. 1E) about 23.9× as long as broad; longest marginal fringe about 8× as long as wing width.

Gaster (Fig. 1F): ovipositor originating from the second abdominal segment, straight apically, slightly exserted beyond apex of gaster; ovipositor about 1.85× as long as protibia.

Male. Body length 450 μm. Similar to female in morphological features and coloration. Scape (Fig. 2A) 2.0× as long as broad; each flagellomere with several mps. Fore wing (Fig. 2C) 7.5× as long as broad, longest marginal setae 2.7× as long as maximum wing width. Hind wing (Fig. 2D) 0.9× as long as length of fore wing, 22.1× as long as broad; longest marginal setae 6.7× as long as maximum wing width.

Host. Unknown.

Distribution. Dinghushan National Nature Reserve of Zhaoqing City (Guangdong, China)

Etymology. The specific name is derived from the type locality.

Comments. This species belongs to the *atomus* species group. It is very similar to *Anagrus karnatakus* Triapitsyn, 2022 (Sankararaman et al. 2022), but differs from the latter by the following characteristics (female): antenna with scape 2.3× as long as broad (vs 3.7×); F2 slightly longer than F1, 1.6× as long as F1 (vs F2 remarkably longer than F1, 2.5× as long as F1); ovipositor 1.85× length of protibia (vs 2.3–2.4×).

Measurements (μm). Female (holotype, n=1): scape 56/24, pedicel 37, F1 15, F2 24, F3 32, F4 32, F5 32, F6 34, clava 81–83/37, fore wing 398/46, hind wing 358/15, ovipositor 181, protibia: 98. Male (paratype, n=1): scape 49/24, pedicel 37/29, fore wing 458/61, hind wing 398/18, genitalia 61.

Acknowledgements

We would like to express our sincere gratitude to Dr. Wen-Jian Li and Mr. Guang-Xin Wang for their assistance in collecting the specimens for this study.

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Additional information

Author contributions: Resources: X-X Jin. Writing–original draft and editing: J-S Wen, X-X Jin. Writing review: G-H Zu, X-X Jin.

Conflict of interest: The authors have declared that no competing interests exist.

Data availability: All of the data that support the findings of this study are available in the main text.

Ethical statement: No ethical statement was reported.

Funding: This study was funded by the project Assessment of Species Diversity and Dominant Populations of Mymaridae in Rice Areas of Guangdong Province, China (No. 2023A04J0146).

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